UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FOREST SITE PREPARATION
(Acre)

CODE 490

DEFINITION

Treating areas to improve site conditions for establishing a forest.

PURPOSE

- Encourage natural regeneration of desirable woody plants
- Permit artificial establishment of woody plants.
- Increase carbon storage in biomass and soils.

CONDITIONS WHERE PRACTICE APPLIES

On all lands where establishment of woody plants is desired.

CRITERIA

The method, intensity and timing of site preparation will match the limitations of the site, safety, and equipment and the requirements of the desired woody species.

An appropriate site preparation method will be chosen to protect any desirable vegetation.

Remaining slash and debris shall not create habitat for or harbor harmful levels of pests.

Remaining slash and debris shall not hinder needed equipment operations or create undue fire hazard.

Erosion and/or runoff will be controlled.

Soil compaction and displacement will be minimized.

All chemicals will be applied in accordance with label guidelines.

Comply with applicable federal and state laws and local laws and regulations during installation, operation and maintenance of this practice.

The type and intensity of site preparation vary according to species desired, ground cover, and soils. Methods of site preparation should be used which will minimize soil erosion. Intensive mechanical site preparation which exposes soil should be avoided on soils with slopes greater than 25 percent. Management problems and species best adapted for various soil types are listed in Woodland Reference 13-2, entitled "Considerations for Forest Management on Alabama Soils", in Section 1 of the Field Office Technical Guide.

Additional Criteria for Sequestration of Carbon

For optimal carbon sequestration, select plants that have higher rates of sequestration and are adapted to the site to assure strong health and vigor and plant the full stocking rate for the site.

Methods of Site Preparation:

A. Harrowing, disking, scalping, or plowing: This type of site preparation turns the soil, thereby removing competition and exposing roots. This preparation is used on cleared areas, sodded areas, and on areas lightly covered with brush. Harrowing, disking, scalping, or plowing should be on the contour and should be used on gentle slopes only.

B. Subsoiling: Subsoiling is used to break compacted surface layers which restrict root growth. Subsoiling should be done to a depth of 18 to 24 inches. Subsoiling should not be applied in clayey soils that shrink and swell. Subsoiling should conform to the planned row spacing and should be applied 2 to 3 months before tree planting when soils are dry.

C. Chopping: Chopping is usually used to prepare upland sites where vegetation is of the smaller scrub-hardwood type. Chopping is usually done with a rolling drum chopper. This type of site preparation minimizes soil loss and may be used on soils with moderate to severe erosion hazard.

D. Shearing: Shearing is used to prepare sites where the vegetation is generally large (8 inches or more dbh). Shearing is done with shearing blades which are either angled or V-shaped. Blades with serrated edges have the best cutting action. Trees should be pushed into contour windrows if the area is to be planted by machine. Windrowing may not be necessary, especially if the area is to be direct seeded or planted by hand. Windrowing increases the cost of site preparation.

E. Blading: Blading is the removal of trees with a straight-blade bulldozer. This is a poor method of site preparation. Blading removes topsoil, thereby damaging the site and increasing erosion. It should be used only when other methods are not available. Debris is pushed down and windrowed on the contour if machine planting is to be done. If minimum site preparation is desired, vegetation may be pushed down and the site may be either direct seeded or planted by hand.

F. Mowing: A tractor drawn rotary mower of the "Bush Hog" type can be used to remove herbaceous vegetation and small, woody vegetation. This method is usually limited to abandoned pasture and cropland.

G. Prescribed Burning: Prescribed burning may be used to remove flammable woody and herbaceous vegetation from sites where either natural or artificial methods are to be used to obtain regeneration. Prescribed burning is often used in combination with other methods of site preparation.

H. Herbicides: Herbicides can be used to kill vegetation before regeneration. Herbicides may be broadcast, applied in bands, or applied to individual stems. Herbicides may be used in combination with other methods of site preparation. The use of herbicides is an excellent method of site preparation on steep slopes where erosion may be a problem. Caution: Use according to instructions on the label. See 666-Forest Stand Improvement.

I. Logging: Logging can be used to expose mineral soil for either natural or direct seeding.

J. Bedding: Large disks can be used to form elevated beds. These beds allow tree planting in wet areas and also reduce competition from other vegetation. Bedding is used often in combination with other methods of site preparation. Bedding should not be used on slopes greater than 2 percent. Bedding should not be used in pitcher plant bogs and in other wetland types where the objective is conversion to pine plantations.

The preceding site preparation techniques may be used alone or in various combinations for either natural regeneration or artificial regeneration.

Time of Year
For maximum effect, nearly all site preparation should be done from late spring to early fall.

CONSIDERATIONS

The site preparation method should be cost effective and protect cultural resources, wildlife habitat, threatened and endangered species, water resources, and identified unique areas.

Visual quality objectives should be considered when selecting site preparation methods.

Anticipate possible off-site effects and modify the site preparation design accordingly.

Consider personnel safety during site preparation activities.

Consider selection of plants that have higher carbon sequestration rates.

If installation and maintenance of the practice has potential of affecting cultural resources (Archaeological, historic, historic landscape or traditional cultural properties), follow Alabama's state policy for considering cultural resources.

PLANS AND SPECIFICATIONS

Plans will address method of site preparation, species, and protection required for desirable woody plants.

Specifications for applying this practice and protection of the site shall be prepared and recorded using approved specification sheets, job sheets, technical notes, and narrative statements

in the conservation plan or other acceptable documentation.

OPERATION AND MAINTENANCE

Repair erosion control measures as necessary to ensure proper function. Access by vehicles during site preparation or after (i.e., before adequate tree and shrub establishment occurs) should be controlled to minimize erosion, compaction and other site impacts.

REFERENCES

Alabama Cooperative Extension Service. January 1997. Prescribed Burning in Alabama Forests. Circular ANR-331.

Alabama Cooperative Extension System, Auburn and Alabama A&M Universities. April 1987. Site Preparation Methods For Regenerating Southern Pines. ANR-275.

Cantrell, Rick. November 1985. A Guide to Silvicultural Herbicide Use in the Southern United States. Auburn University.
USDA, Forest Service. 1989. A Guide for Prescribed Fire in Southern Forests. Technical Publication R8-TP11.